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MO-0214

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. 10/679,530
Filed: 10/06/2003
Amendment Date: July 10, 2006
Applicant: WILLIAM L. MOHAN
Examiner: JESSICA T. STULTZ
TC/A.U. 2873
For: NONINVASIVE RETINAL IMAGE-SCENE REPLACEMENT MEANS

Reply to office Action of April 10, 2006
Docket No. MO-0214

DECLARATION OF WILLIAM L. MOHAN

Be it known that I, William L. Mohan, hereby declare that I have worked in the field of Optics, Digital Image Processing, and the like, for at least fifty years and have engaged in designing, experimentation, building prototypes, manufacturing, trouble shooting, obtaining many United States Patents along with corresponding patents in countries throughout the world. These endeavors include, but are not limited, to the following United States patents related to optics and associated products:

<u>Number</u>	<u>Issue Date</u>	<u>Title</u>
2,960,908	11/22/60	Parallax Interval Sensing Device
Co-Inventor		
3,107,070	10/15/63	Guidance System
Co-Inventor		
3,401,232	09/10/68	Fiber Optic Scanning Apparatus
Co-Inventor		
3,790,759	02/05/74	Pitch Matching Detecting and Counting system
Co-Inventor		
4,065,860	01/03/78	Weapon Training Simulator
Co-inventor		

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4,912,317	11/27/90	Pitch Match Detecting and Counting
Co-Inventor		System With Tilted Optical Axis
5,194,008	03/16/93	Subliminal Image Modulation
Co-Inventor		Projection and Detection System
		and Method

The present invention is concerned with the inability of a person's eye to be capable of discerning the exact point-of-interest, the so called "fixation point", in viewing an image scene of interest that would be caused by the loss of, or damage to, the very center area, the "foveal", which lies on the eye's optical axis at the retina center area.
(See Fig. 4 herein).

The incoming light ray bundles that constitute the point of interest image are clustered within a degree or so along the optical axis of the eyes and are so called [co-axial rays or parallel oblique co-axial rays.

A single wedge prism of suitable power, usually 6 to 12 diopters, and set in a specific rotational direction of orientation, is used to redirect and divert all incoming co-axial rays of an image scene, including the point of interest, off and away from the eyes' optical axis to a suitable off axis retina area; for example, as shown in Fig. 4, to the Fovea or Parafovea area of the Retina. This concept is completely different from the disclosures of Parke '924 and teachings of Feinbloom '030 in view thereof.

Parker's '924 patent utilizes an optical system comprised of a positive, double convex lens (38) and a negative, double concave lens (48) in combination, to shift an incoming image ray to an off-axis area. This shifting is accomplished by specific fabrication of two oppositely ground refractive lenses in order to misalign an optical axis from the eye's optical axis so as to achieve a desired image position shift to a non damaged area of the retina. Parker uses no wedge prism, single or otherwise, and is limited to a plurality of distinctively dissimilar refractive lenses.

Further, Parker '924 explains how he shifts the focused image around to the optimum area of the retina, at [Col 4, line 38] by "----the step of angularly positioning the first lens with respect to the second lens, so as to selectively focus an image on a person's retina----". Parker does not even remotely contemplate any sort of wedge prism that could singularly change incoming image scene rays from a person's optical axis to a preselected angled direction of rays for focus on a different portion of the person's retina.

Feinbloom '030 is directed to using two refractive members, a pair of spectacles, or carrier lenses, to each of which is attached a separate binocular prism that only corrects blurred vision, such as double images. As Feinbloom states in Column 5, lines 12-17, "----when prism 25 is rotated ---, the image O' of an object O will be perceived to be to the right of the optical

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The basic concept of the instant invention is: To deny the damaged retina eye's optical axis system access to any and all parallel optical axis rays. To force the damaged eye optic system into using only oblique rays to move and construct the image of interest to a new and different axis off from the original optical axis, as redirected by the prism's refractive power.

The present invention uses a wedge prism having a circular lens shape, with predetermined refractive power, to divert all incoming image scene rays, including those rays parallel to and along the eye's original optical axis that were headed towards a damaged, on axis, area of the retina. The object is to redirect all of the above rays in such an oblique direction so as to force the eye's optical lens system to focus them on to a new non-damaged area, off-axis to the original axis, such as on to the Fovea or Parafovea (Fig. 4). The exact direction of deviation of the rays through the wedge prism is predetermined by the rotational position of the circular wedge prism. The amount of displacement (refraction) of a ray through the wedge prism is determined, primarily, by the wedge angle of the prism. This power is noted as diopters.

It is apparent that neither Parke '924 nor Feinbloom '030, either singly, or in combination, anticipate or teach the instant invention, its claims or its concept. Further, in their combination, the resulting optical system would generate conflicting image scene movements.


WILLIAM L. MOHAN

Dated: 

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